

WHAT IS CLAIMED IS:

1. A multi-foil optic comprising:
a plurality of flat plates each having a reflecting surface, and positioned
normal to an arc to provide total external reflection to high energy radiation
5 incident on the plates from a high energy radiation source, to focus the incident
high energy radiation on a designated surface, wherein each plate has a thickness
in the range of 50-70 μm .
2. The multi-foil optic of claim 1, wherein the high energy radiation
10 comprises X-ray radiation.
3. The multi-foil optic of claim 1, wherein the high energy radiation
comprises extreme ultraviolet (EUV) radiation.
4. The multi-foil optic of claim 1, wherein the plates are made of
glass.
- 15 5. The multi-foil optic of claim 1, wherein the plates are made of
mica.
6. A method for performing high energy radiation lithography,
comprising the steps of:
receiving high energy radiation from a high energy radiation source;
20 focusing the high energy radiation from the high energy radiation source
using a multi-foil optic;
receiving the focused high energy radiation from the multi-foil optic onto
a lithographic specimen via a lithographic mask.

7. The method of claim 6, wherein the high energy radiation comprises X-ray radiation.

8. The method of claim 6, wherein the high energy radiation comprises extreme ultraviolet (EUV) radiation.

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9. A high energy lithographic system, comprising:
a high energy source;
a multi-foil optic for focusing high energy radiation from the high energy source; and

10 a mask, which receives focused high energy radiation from the multi-foil optic and selectively blocks some of the radiation to form a pattern on a specimen that is exposed to high energy radiation passing through said mask.

10. The high energy lithographic system of claim 9, wherein the high energy radiation comprises X-ray radiation.

15 11. The high energy lithographic system of claim 9, wherein the high energy radiation comprises extreme ultraviolet (EUV) radiation.